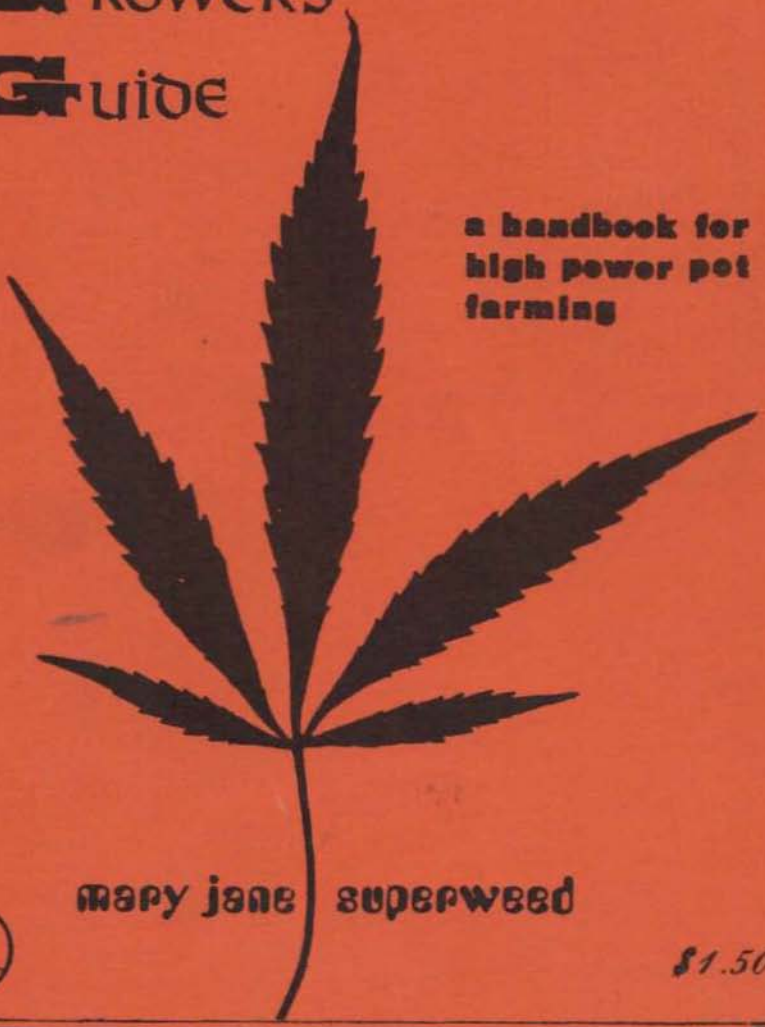
The Super Grass Grower's Guide



a handbook for high power pot farming



mary jane superweed

$1.50

Produced by STONE KINGDOM SYNDICATE

Super Grass Grower's Guide

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1983

Stone Kingdom Syndicate

A MODERN METHOD OF GROWING SUPERGRASS

Hydroponics is the technique of growing plants in a nutrient solution without the use of any soil. This procedure was originally adapted as a controllable method of studying, individually or in combination, the effects of the various minerals involved in plant nutrition. Although it has not yet found universal acceptance as a standard system of commercial agriculture, hydroponics has numerous advantages over soil farming. Among these are: uniformity of growth, higher yields, greater freedom from weeds and diseases, more rapid and sustained growth, and saving of time, labor and mess. Also the balance of nutritional elements can be controlled with great exactness. Marijuana farmers can exploit this control to produce certain desirable results at different stages of growth—for example, good height and profuse foliage during early life, then high resin content and hastened sexual maturity before harvesting. Mineral control can also be used to influence the proportion of female over male plants.

TO BUILD A HYDROPONIC GROWING TABLE

There are numerous ways in which to build a growing table. Your choice depends largely upon the volume of farming intended. Here are several possibilities:

1.) For large scale farming a design similar to that shown in Illustration A will provide daily circulation of the nutrient solution with a minimum of human effort. This is accomplished with an electric pump, which can be purchased or salvaged from an automatic washing machine. Circulation of the solution is important primarily because it keeps the minerals evenly distributed throughout the table and furnishes aeration necessary to the health of the plants. The table can be constructed of 1/2-inch thick exterior plywood and sealed with tar, concrete, epoxy resin or any suitable waterproofing material. Do not use zinc or galvanized metal unless you intend to cover it with tar; these metals can be toxic to plants. A piece of wire mesh should be fixed over the spigot hole

Illustration A ~ Hydroponic Growing Table

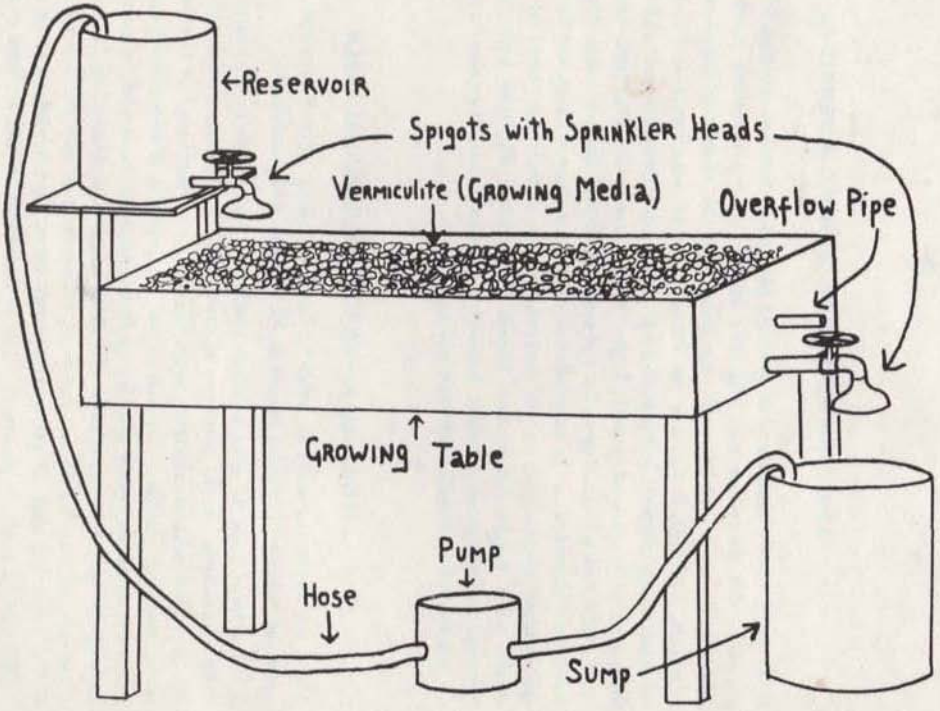
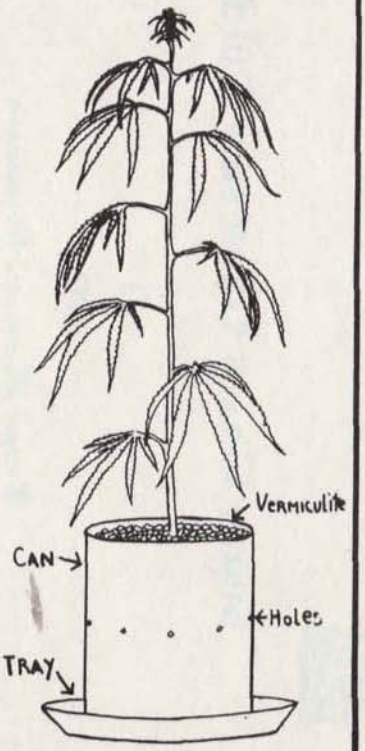


Illustration B

Small Scale Hydroponics



on the inside of the box to prevent stray particles of rooting aggregate from entering and possibly clogging or damaging the pump. The sprinkler heads on two spigots help further to aerate the solution. The hydroponic table is filled to about an inch from the top with Vermiculite, an absorbent insulating aggregate available at most hardware stores or lumber yards for about 60 cents a pound. Some stores carry horticultural grades of this material. Other common rooting media are cinders, granite chips, broken brick, fine gravel (1/8 to 3/8 inch), crushed stone and sand. The difficulty with most of these (especially brick) is that they may contain water-soluble mineral substances which could throw off the delicate chemical balance of the nutrient. Sand is good if it is neutral, lime-free, coarse textured and thoroughly washed. Nutrient solution is poured over the rooting media until it starts to come out of the overflow pipe. Because water is being constantly evaporated from the surface of the Vermiculite as well as being taken up by the plants it is necessary to add more nutrient solution every day or so. How often depends upon such environmental factors as temperature and humidity.

2.) For a medium size operation or one in which expenses must be minimized, the pump may be omitted. In this case the drained liquid in the sump is poured through the upper tank. Transfer twice the volume of water contained in the table, i.e., if the table holds 18 gallons and the lower bucket holds 3 gallons, transfer 12 bucketsful or 36 gallons total.

3.) For really small-scale farming any kind of two-gallon cans may be used: Punch or drill several small holes in a band around the half-way mark on each can. Fill cans to within an inch of the top with Vermiculite and place each can in a pie tin or some kind of tray to catch the overflow of liquid. Add nutrient solution until it begins to flow out of the holes. To circulate and aerate the nutrient place can in a bucket and pour half a can of fresh nutrient solution over the Vermiculite once daily. The overflow which comes out of the holes can be returned to the jug in which the nutrient solution is stored. The cans have the advantage of being light and portable so that indoor farmers can occasionally take their plants out in the natural light during safe and sunny hours.

NUTRIENT SOLUTION

There are several types of nutrient solution which may be used:

1.) Commercial preparations such as CAN-GRO or HYPONEX. Most of these contain an excellent balance of those minerals necessary for healthy pot plants. Check the label when selecting a brand to be sure that all of the minerals mentioned in this book are present. Use as directed and supplement those minerals which are lacking.

2.) Milorganite (commercially processed human manure) or sterilized animal manure. Mix one part manure with ten parts water. Allow to soak overnight, then strain through burlap. Unsterilized manure solution should be heated, held at a boil for five minutes, allowed to cool and then strained. It is best to add some chemical fertilizers to manure to be sure that all the necessary minerals are supplied. Manure solution should only be used if the growing tank is in a shed or greenhouse. It should not be used in the house. It is mentioned here only because so many people feel that it is important to use natural organic fertilizers. They may have a point in the case of crops raised for human nutrition. But it has been found that the production of high resin content grass can be better accomplished with a carefully programmed formula series.

3.) Programmed formula. The mineral balance in the growing table can be controlled to influence the plant at various stages of growth to produce certain predetermined effects during various periods of the plant's life. For example: oversupplying the plant with nitrogen throughout early life promotes abundant growth whereas nitrogen deprivation towards maturity encourages resin production. More about this as we get into our subject:

HOW TO GROW LARGE, FAST-GROWING, SUPERSTONING MARIJUANA PLANTS WITH HYDROPONICS

Select only large, dark seeds. Light green ones are less likely to succeed. They should be from a high-quality grass and preferably one which comes from a fairly tropical zone with long hours of light. These influences tend to produce temporary genetic alterations such as double and triple sets of chromosomes which, even under indoor and greenhouse conditions, may remain in the strain for several generations. The seeds can be started in the growing table. Place seeds two inches apart on top of the Vermiculite and cover with 1/4 inch of Vermiculite. Lay a dark cloth or plastic cover over the table. If you are employing any system of temperature control you may raise the temperature of the table to 100° F. for the first twelve hours (this stimulates rapid germination). Then let it drop and remain at 75° F. If you have no way to control tank temperature, you can soak the seeds for twelve hours in 100° F. water before planting. If any of the seeds have begun to sprout during this pre-soak, transfer them carefully to the growing table with an absolute minimum of exposure to light. When doing any transplanting (or plant surgery) it is best to work under green light. This lowers metabolic activity in the plant and renders it less vulnerable to shock. A green gelatin filter may be placed over any ordinary light source. One week after planting remove the dark cloth from the table. If possible set the room temperature at 60° F. while the growing solution in the table remains at 75° F. Keeping the growing media warmer than the surrounding air stimulates rapid growth and tends to produce more females than males. If you are using an artificial light source you can, temporarily, set the exposure cycle at 16 hours of light and 3 hours of darkness followed by 2 more hours light and another 3 of darkness; total 24 hours. The interruption of the night portion of the cycle contributes nothing to the successful growth of the plants, but it does stimulate hormones which cause a larger number of female plants to be produced. This can be accomplished with an automatic timer or manually. It does not require that you get up in the middle of the night to turn on the lights. If you are growing your plants in a closet or relatively lightproof room, the artificial day-night cycle does not have to coincide with that of the sun. Night in the growing chamber can be during the real day. During the germination period use plain water in the table. As more liquid is required to maintain the moisture level nutrient solution Formula A can be gradually added (see below). Two weeks after planting drain the water from the table and replace with undiluted Formula A. At this time raise the room temperature to 75° F. and let it remain there. Also at this time reduce the day cycle to ten hours and stop the nocturnal interruption. This puts the plants on the road to early maturity (about a week early). Persist with the ten-hour exposure for five days, then establish a "day" of fourteen hours. Weed out the weaker plants and let the remaining ones be spaced about 18 inches apart. Probably the only drawback with hydroponic farming is that plant tissues tend to be slightly softer than those grown in soil. Supports are recommended. These can be either canes or stretched cord.

FORMULA CONTROL

Formulae A, B and C contain the elements which are required in fairly large amounts plus an ounce of micronutrient concentrate which contains those which are required only in traces.

Micronutrient solution:

Boric acid	3 gm.
Manganese sulfate	4 gm.
Iron citrate	1 oz.
Copper sulfate	2 gm.
Zinc sulfate	2 gm.
Sodium molybdate	2 gm.
Water	1 gal.

(It is best to use pure distilled water.)

Because five-gallon water cooler carboys are ideal for storage of nutrient solutions, the following formulae are proportioned for that amount:

Formula A (to be used after the second week):

Potassium nitrate	6 gm.
Ammonium nitrate	45 gm.
Calcium nitrate	6 gm.
Potassium acid-phosphate	6 gm.
Magnesium sulfate	6 gm.
Potassium chloride	8 gm.
Potassium sulfate	14 gm.
Micronutrient concentrate	1 oz.
Water	5 gal.

Formula B (to be used after sixth week):

Calcium nitrate	12 gm.
Potassium acid-phosphate	6 gm.
Magnesium sulfate	6 gm.
Potassium chloride	8 gm.
Potassium sulfate	14 gm.
Micronutrient concentrate	1 oz.
Water	5 gal.

Formula C (to be used after ninth week):

Calcium nitrate	3 gm.
Potassium acid-phosphate	15 gm.
Magnesium sulfate	9 gm.
Magnesium chloride	9 gm.
Micronutrient concentrate	1 oz.
Water	5 gal.

These preparations are available, ready mixed, from Magic Garden Supply Co., P.O. Box 332, Fairfax, California 94930. $1 size makes one gallon of each solution with micronutrients. $4 size makes five gallons of each.

The hydroponic table should be drained immediately before introducing a new formula. Two weeks before harvesting remove three-fourths of the water from the growing table.

Do not replenish unless the plants start to wilt. If they do then add just enough water to perk them up. Water deprivation increases the production of resins and drives them to the tops of the plants.

The formulae given above are based upon the fact that marijuana plants have different mineral requirements at various growth stages and also that over- and under-supplies of certain elements can promote characteristics valuable to pot smokers. The specific relationships between the plant's physiology and nutrient chemistry are as follows:

Nitrogen—Abundance during early life promotes rapid leafy growth and female predominance, whereas a shortage of this element in later life stimulates resin production.

Potassium—Abundance during early life causes plants to grow large and leafy, mature early and be predominantly female. But too much of this element in later life can be harmful and will inhibit resin production.

Calcium—Too much in early life stunts growth; too much in later life inhibits resin. The greatest calcium requirements occur during middle life.

Magnesium—Abundance during early life causes plants to be tall, but too much will tend to produce mostly males. Increased amounts in later life stimulate early maturity and assist in resin production.

LIGHT

Although hydroponics works well for both outdoor and indoor growing, it is more likely to be used with the latter. If so, the plants may be illuminated either by filtered sunlight in a greenhouse or by artificial light. If you are constructing your own greenhouse do not use ordinary window glass—it filters out most of the essential ultraviolet light necessary for photosynthesis. Use greenhouse glass, which is available from any greenhouse equipment and supply house. If you wish to conceal your plants from the eyes of outsiders, cover the inside of the glass with translucent polyethylene or cast vinyl sheeting. Both of these admit the proper light; polyethylene is the least expensive of the two, but vinyl is the more durable. These materials may be located under "Plastics" in the yellow pages of most city telephone directories or ordered from Edmund Scientific Co., 600 Edscorp Bldg., Barrington, N.J. 08007. Be sure that your greenhouse gets a full day of sunlight. If it does not you should supplement with artificial light.

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ARTIFICIAL LIGHT

For several reasons artificial light is best for growing high potency marijuana plants. Remember: abnormal growing conditions must be employed to produce abnormally powerful grass. There are many unique and interesting methods of artificial illumination which have been experimented with in the past. Some of these include the use of colored filters, sunlamps, mercury vapor tubes etc. These are thoroughly described in *The Complete Cannabis Cultivator* (see ad on back cover). After much trial and error under carefully controlled conditions we have concluded that the best low-priced light sources are the Sylvania wide-spectrum 40-watt GRO-LUX lamps, which cost $2.99 each at Sears

Roebuck, or any commercial equivalent, such as 40-watt NATUR-ESCENT tubes, available from Edmund Scientific Co., 600 Edscorp Bldg., Barrington, N.J. 08007, at $13.00 per set of four tubes. All of these fit standard fluorescent fixtures. Ordinary fluorescent GRO-LUX tubes predominantly emit light from the blue portion of the spectrum, but wide-spectrum lamps also emit a substantial amount of red light. These two kinds of light serve separate functions in plant growth. Blue light regulates respiration and stimulates leaf growth, especially during the seedling stage. Red light promotes later leaf and flower development. Many indoor farmers claim that for the most spectacular results you can insert ordinary fluorescents or blue-spectrum GRO-LUX lamps into the fixtures for the first nine weeks. After that switch over to wide-spectrum lamps. The outcome of this procedure, they say, will be lush foliage, early maturity, well-developed tops and high resin content. At the time of this printing our own tests with this possibility are not satisfactorily completed. If any adventurous experimenters care to try it, be sure to grow a control crop to test it against. We are always happy to hear about any unique experiments you have tried. Interesting letters will be answered with free gifts from STONE KINGDOM. When wide-spectrum lamps were not available a common practice was to supplement the red light deficiency with one 75-watt incandescent globe for every 40-watt fluorescent. Many plant physiologists insist that this procedure does not provide enough of the right kind of red light and more infra-red light than is healthy for most plants. Yet many farmers maintain that this practice works well and they continue to employ it. If you try it remember that most incandescent lamps begin to decrease their light output after 400 hours of use and should be changed at this time. Sylvania GRO-LUX lamps give full brightness for 18,000 hours, but turning them on and off shortens their life. When dark rings start to form at the ends of the tubes it is time to change them. If your growing space will not accommodate the 48-inch length of a 40-watt tube, they are available in shorter lengths with correspondingly lower wattage.

ARRANGEMENT OF LIGHTING

If you are growing your plants under artificial illumination, you will want to get the maximum efficiency from your light sources. Assuming that you are using a closet for a growing chamber, follow these instructions for best results:

1.) Line your closet walls with aluminum foil or at least paint them white. Dark walls absorb much of the light.

2.) Place the fluorescent tubes about four or five inches apart on a plywood board which has been cut to the dimensions of the chamber and covered with foil or painted white. Hang this in your closet on a pulley. As the plants grow you can keep the light bank about eighteen inches above their tops.

3.) When the plants get really tall the lower leaves will be too far from the light to receive much illumination. As soon as these bottom leaves start to wither they should be broken off, dried and smoked. Otherwise they will absorb much of the resin which is trying to reach the tops. At this time a few fluorescent lights may be placed along the closet walls to help illuminate the middle and lower foliage.

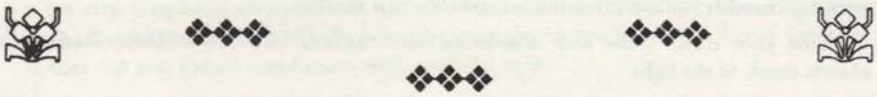
4.) The lights should not be left on for 24 hours a day. This could kill your plants, or at best cause them never to mature. During early life 16 hours a day is ideal. This will

promote full growth and leaf development. But from the second or third week on 14 hours is best. Some growers who wish to accelerate maturity keep the light period down to 12 hours a day. Less than this can seriously inhibit resin production.



PRODUCING MOSTLY FEMALES

Although both male and female plants contain the resins which get you high, the female tends to be the more competent at producing these substances. For this reason—especially with small-scale indoor farming—it is desirable to have as many females and as few males as possible. And it *is* possible. Under normal conditions a seed is almost as likely to produce a plant of one sex as the other. During the seedling stage the balance of the male-producing enzymes against the female-producing enzymes decides what the sex of the plant will be. It is a balance so delicate that even slight abnormalities of environment can sway the decision. As was pointed out in the section titled "Formula Control," overabundances of nitrogen and potassium during early life tends to produce a high proportion of females. Conversely, an overdose of calcium or magnesium shifts the ratio in favor of the males. Drastically altering the normal day/night cycle can also influence the sex "choice" of a plant. Shortening the day span to seven hours causes plants to produce blossoms of the opposite sex. This phenomenon can be exploited to breed seeds which will have a genetic inclination towards becoming female plants. This technique is thoroughly described in *The Complete Cannabis Cultivator* (see ad on back cover). Since the seven-hour day must be maintained throughout the life of the plant a low resin count usually results. The interrupted night and programmed formula methods, however, if carried out as instructed, do not hinder the manufacture of resins.



SYMPTOMS, CAUSES, AND CURES FOR MINERAL DEFICIENCIES AND OVERDOSES

If all of the elements listed in this book are accounted for in the formulae, there should be no nutritional problems. It is still wise, however, to keep an eye on your plants for signs of mineral deficiency or overdosage. The following is a list of symptoms, causes, and cures. Corrections for mineral deficiency must be applied with caution because of the delicate mineral balance involved in the programmed formula series. The assumption here is that all other factors such as lighting, water and air temperature are in proper order.

Yellowing of older leaves=nitrogen shortage. Since Formula A intentionally overdoses nitrogen a shortage cannot occur at this stage. But since the ninth week formula starves

the plant of this element you will have to watch for deficiency symptoms. No more than two grams of ammonium nitrate per five gallons of nutrient solution should correct the condition without seriously disturbing the formula balance.

Older leaves slightly yellowed followed in a few days with dark grayish brown spots along the leaf edge=potassium deficiency. The program should supply more than ample potassium during the first nine weeks. If deficiency occurs after this time add three grams of potassium acid-phosphate per five gallons nutrient solution.

Yellowing of younger leaves which soon extends to the whole plant=sulfur deficiency. Six grams potassium sulfate per five gallons during first nine weeks or six grams magnesium sulfate after that.

Buds fail to develop and fine root hairs wilt=calcium deficiency. There should be enough in the formula, but if symptoms occur during the first six weeks add three grams calcium nitrate per five gallons nutrient. Between sixth and ninth weeks use six grams calcium phosphate. After that use three grams calcium phosphate.

Yellowing of older leaves around the veins, quickly spreading to the whole plant; veins have varicose appearance=magnesium shortage. Add six grams magnesium sulfate per five gallons nutrient. Magnesium deficiency cannot occur with Formula C because the dosage is intentionally high. In fact during this time you should watch out for magnesium overdose. Symptoms of this are pale green leaves with brown wilting at the edges. If this occurs cut the basic quantity of magnesium salts in half for one week and then bring it gradually up again. This can be easily accomplished by draining half of your tank and then replacing the drained liquids with a special preparation of Formula C which contains no magnesium salts. After that you can continue with regular replacements of normal Formula C preparation.

Yellowing of younger leaves with varicose appearance=iron deficiency. Plant only needs traces, but before adding any iron compounds you should check the acidity of the nutrient solution. The plants will have difficulty absorbing iron if the pH factor exceeds 8. If this is the case add dilute sulfuric acid (3 parts acid, 7 parts water) until pH is normal (pH 5-7). If alkalinity is not the cause of the problem add one ounce of micronutrient concentrate per five gallons nutrient solution. If deficiency symptoms persist after one week dissolve 1/2 gram of iron sulfate in 1/2 cup of water with a few drops of sulfuric acid and add this amount to each five gallons of nutrient solution.

Yellowing of all the leaves; turning brownish orange later; roots appear shorter than normal in their lateral spread and are swollen at their ends=chlorine deficiency. If the prescribed amounts of potassium or magnesium chloride are included in Formulae A, B and C this deficiency cannot possibly occur.

Leaves too small, wrinkled at edges and yellow around veins; not many leaves at bottom and possibly only at top; large gaps between one leaf branch and the next=zinc deficiency. These symptoms are most likely to occur when plant is four to six weeks old. The plants do not absorb this element very well if the pH factor is above 8. Correct pH as described above. Otherwise add one ounce micronutrient per five gallons nutrient.

Swelling and cracking at base of stem exposing dry rotted inside=boron deficiency. Add one ounce micronutrient concentrate per five gallons nutrient solution.

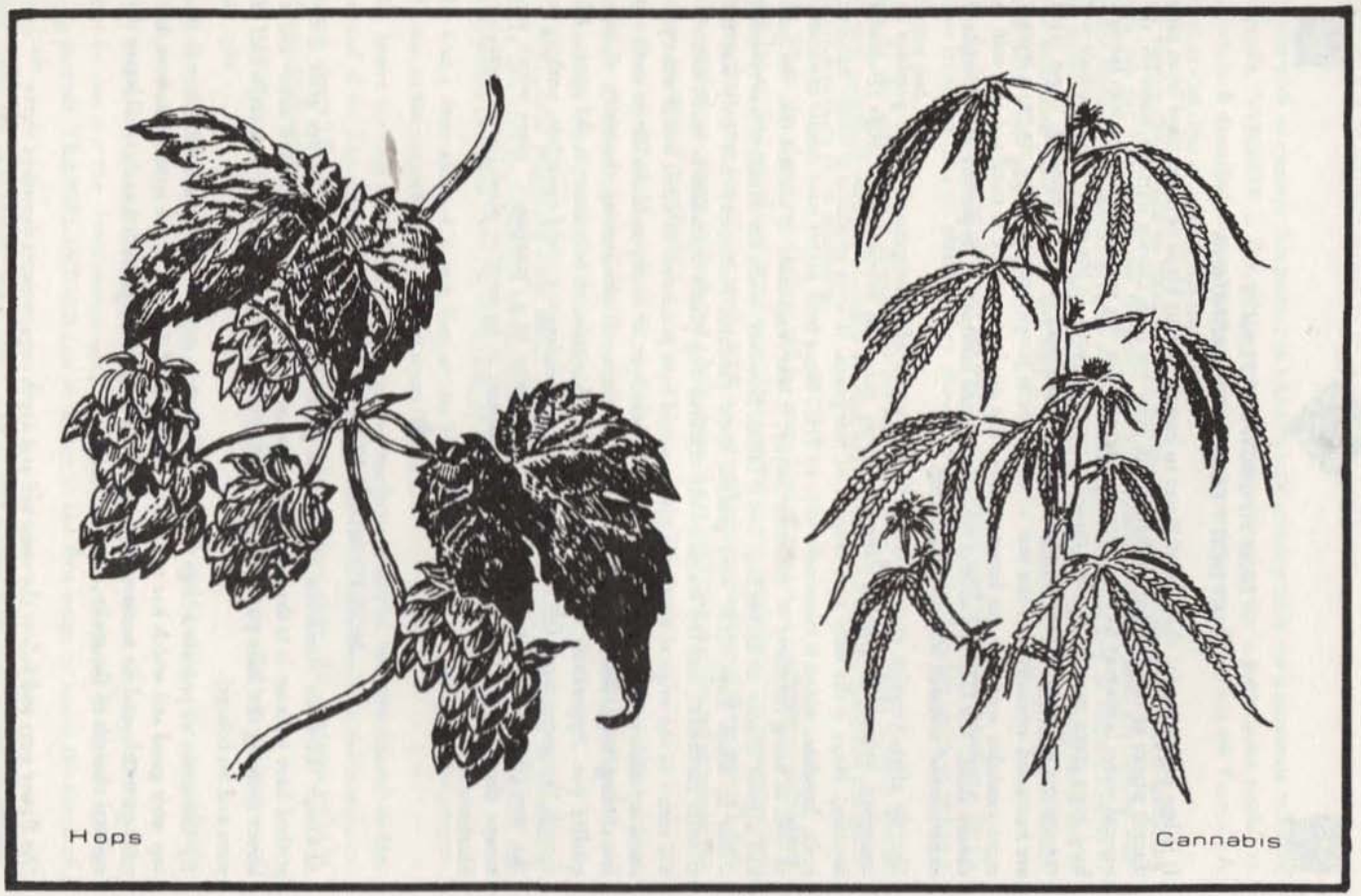
Yellowing between the veins of the middle part of the plant, later affecting the top leaves too; new leaves will be twisted=molybdenum shortage. When large amounts of ammonium nitrate are used as in Formula A the yellowing may not occur, but the twisting will. If the pH factor is not at fault add one ounce micronutrient per five gallons nutrient. Without molybdenum the plant cannot properly utilize nitrogen in cell growth.

Whenever any chemicals are added to the nutrient solution test the pH factor. Once every two weeks run a routine test of both acidity and all of the major elements. Soil test kits are available at Sears Roebuck or any nursery and cost about $7. There are many other important things to know about growing supergrass, such as harvesting for maximum resin production and retention. These are discussed in detail in *The Complete Cannabis Cultivator* (see ad on back cover).

EXPLORING THE UNKNOWN

In some parts of Mexico farmers simply stick the marijuana seeds in the soil and depart until harvest time. But they are very cautious that the moon is right for planting. It should, most moon-conscious farmers say, be full and in a water sign (Scorpio, Pisces or Cancer). Experiments in which people prayed over plants indicate that prayer is beneficial to plant growth. Perhaps the plants just appreciate that someone cares enough to pray. Vegetable life seems to be quite sensitive to good and bad vibrations. EEG (electroencephalograph) tests lend support to the green thumb concept. A former police lie detector expert found that when violent and negative feelings were being experienced or when pain was being inflicted upon any animal life, plants in the immediate vicinity showed disturbed patterns on the EEG. Many pot farmers claim that playing music for plants improves them in various ways. Some say that a steady diet of sitar music augments resin production. It is prudent not to get too strung out on any of these claims, but it is also wise not to scoff at them too readily.





Hops

Cannabis

HOW TO GROW POT PLANTS THAT DON'T LOOK LIKE MARIJUANA

It is less expensive for the United States to import various kinds of hemp fiber from such distant places as the Philippines than it is to grow her own. During wartime, however, the normal water lanes may be cut off or endangered. For this reason a few American farmers have been given permits to raise cannabis crops for seed. In the event of a large-scale war the nation will always have an abundance of hemp seed ready for planting. These seeds are harvested annually and the rest of the plant is plowed under. After six years storage most cannabis seeds are no longer viable. The outdated supply is sterilized and sold as canary food. The U.S. and several other concerned institutions frequently have sponsored experimental research with hemp growing.

Shortly after America entered World War II, a pair of investigators tried to produce an improved hybrid by grafting cannabis plants onto the rootstocks of hops (*Humulus lupulus*). Hops is the only near relative of marijuana. It even produces a mildly narcotic resin, lupuline, which is chemically akin to THC. Since both plants have similar chemistry as well as being members of the same family, it was reasonable to assume that the graft had a good chance of succeeding. But it failed. However, when the situation was reversed –that is, when hops vines were grafted onto cannabis rootstocks–not only was the transfer successful, but the leaves of the matured hop plants contained as much cannabinol resins as the original marijuana plants would have produced. In other words what you come up with is a thirty-foot-long vegetable which to all observers looks like an ordinary law-abiding hops vine, but which secretly contains all the stoning chemistry of high quality pot. Apparently the resin production of marijuana originates in the roots. Although the government felt that this botanical phenomenon could contribute nothing to the war effort many heads are likely to find value in a "marijuana" plant which can escape the notice of the narcs because it appears to be another plant (see comparative illustration).

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HOW TO GRAFT HOPS TO MARIJUANA

Although there are numerous methods of grafting, the ground-level wedge graft is described here because it is the kind used in the original experiments described above and it leaves showing the least possible amount of actual marijuana (about an inch and a half of stem and no foliage).

1.) Construct or procure a large flat bed no less than six inches deep and fill nearly to the top with good soil which has an acidity between pH 5 and 7. Work in some manure, but not too much, and do not use any high nitrogen chemical fertilizers as this will lessen the survival chances of the grafts

or

Use flower pots and follow the same soil and depth requirements described above

or

Use the site on which you plan to grow your pot-hop vines

or

If you with to attempt this project in a hydroponic growing table use a moderate nitrogen formula. HYPONEX is fine. If you mix your own nutrient use a preparation similar to Formula B described in the article on hydroponics in this manual. Do not use Formula A or C at this time or your grafts may perish.

2.) Having chosen one of these growing places, plant seeds from the very best marijuana you can get your hands on. Highest quality Michoacan, Panama Red, Vietnam or Acapulco Gold are preferred. Because of environmental influences any of these are likely to be natural triploid or tetraploid varieties, that is, they may have one or two extra sets of chromosomes. Such mutants not only produce more resin, but are also larger, healthier and more likely to survive grafting.

3.) As the plants grow weed out the inferior ones which tend to crowd the others. By 45 days from the time of planting they should be spaced about ten inches apart, or one to a flower pot.

4.) At the same time that you start the marijuana also plant hop seeds. Choose one of several polyploid varieties available at most seed houses. Follow the same soil and planting instructions as for marijuana.

5.) When the plants are 45 days old lay some kind of marker (a toothpick or matchstick will do) at the base of each marijuana plant parallel to the cotyledons (the unserrated first leaves that came out of the seed). With a single-edge razor blade sever these plants below the cotyledons, about an inch and a half above the ground (Fig. 1). Discard or smoke the upper portion of the plants.

6.) Sever all of the hops plants at approximately the same point. Make sure that at least an inch of stem extends below the cotyledons to the point of severance. Uproot and discard the lower portion of these plants.

7.) Split each marijuana stem about 1/2 inch downward from the point of severance. Make this split perpendicular to the marker which represents the directions in which the cotyledons extended from the stem (Fig. 2).

8.) Cut a slant about 1/2 inch long at the base of each hop stem. Make the cut perpendicular to the cotyledons of the hop scion (Fig. 3).

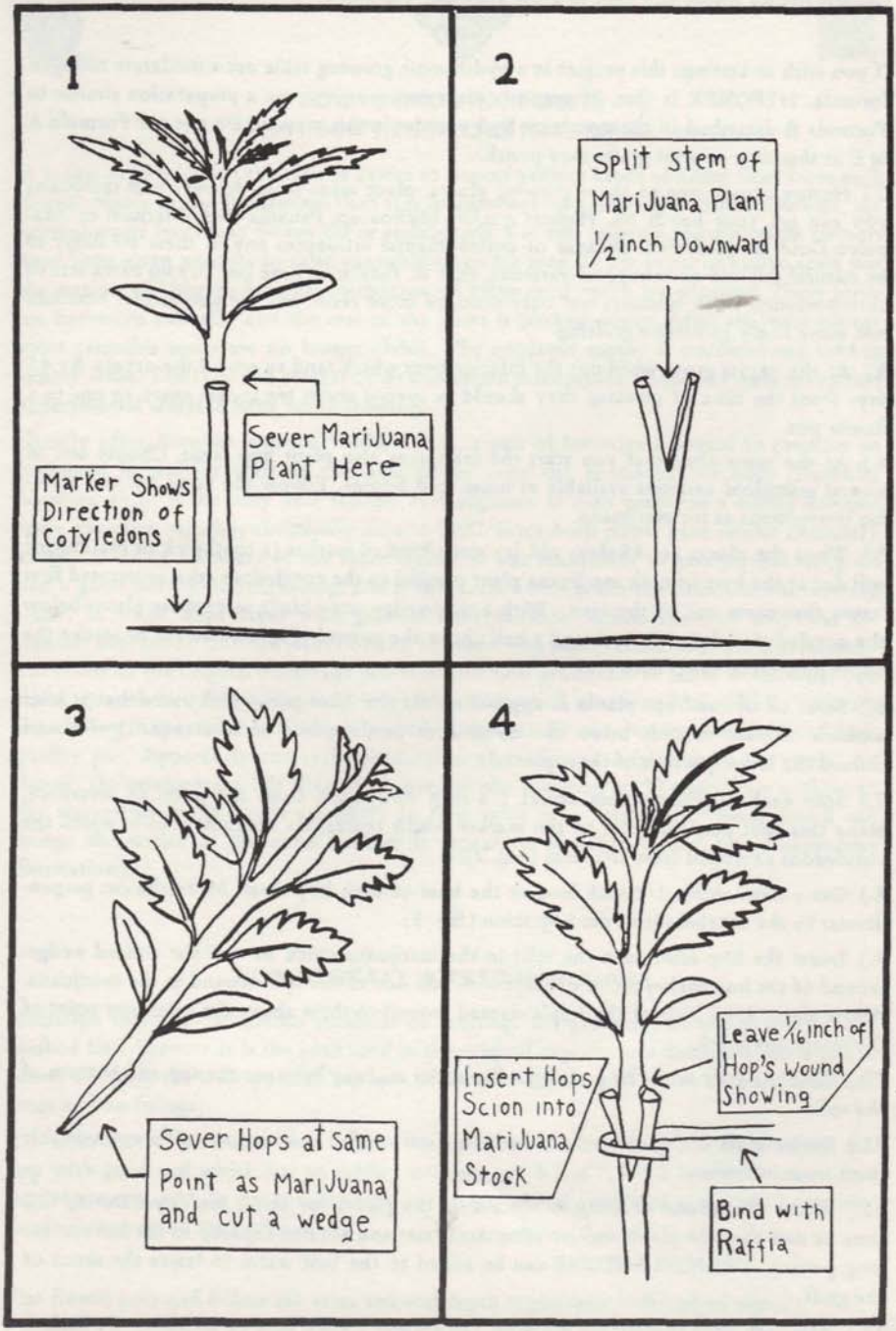
9.) Insert the hop scion into the split in the marijuana stock so that the slanted wedge-wound of the hop makes direct contact with one side of the split-wound in the marijuana. Allow about 1/16 inch of the hop's slanted wound to show above the severance point of the marijuana stock.

10.) Bind the graft with flat grafting raffia about midway between the top and bottom of the split.

11.) Smear graft sealer around the wound. Graft sealer and binding raffia are available from most nurseries.

12.) Allow the wound dressing to remain on the plants for about ten days. During this time be sure that the plants receive adequate water and are not exposed to the hot sun for long periods. TRANSPLANTONE can be added to the first water to lessen the shock of the graft.

13.) After ten days remove the dressing. The surgery should now be satisfactorily healed.


1
Sever MariJuana Plant Here
Marker Shows Direction of Cotyledons
2
Split stem of MariJuana Plant ½ inch Downward
3
Sever Hops at same Point as MariJuana and cut a wedge
4
Leave 1/16 inch of Hop's wound Showing
Insert Hops Scion into MariJuana Stock
Bind with Raffia

14.) After an additional ten days the "hop" vine may be transplanted to its final growing site. The vines should be planted at least four feet apart and given a fence or preferably an arbor on which to climb. The leaves can be harvested, dried and smoked in the same manner as marijuana.

It is not the author's place to advise whether or not you would be breaking the law by owning cannabinated hop vines. No such case has ever been tested in the courts. It is unlikely that narcotics agents would ever discover your secret and if they did it is very possible that you would eventually win your case. But this could be costly and time-consuming. The hassle of standing trial can in many ways be worse than the penalty. Also bear in mind that it is illegal in the United States to grow the marijuana seedlings required in making this graft.

The hops fruit is used in beermaking as a flavoring. If any readers are interested in home brewing they might try the fruit of "potted" hops for a unique experience in beer drinking. Those who do are warned that beer also contains the toxin alcohol.



PRODUCING SUPERIOR BREEDS OF MARIJUANA

Mention has already been made of marijuana polyploids. These are superior plants which carry extra sets of chromosomes. They are larger, healthier, and richer in resin than normal diploids. Polyploids either occur naturally as a result of environment or can be induced by treatment with colchicine, a toxic substace derived from saffron. To accomplish this dissolve one part colchicine in one hundred parts distilled water and soak the seeds in this solution for twelve hours at 100° F. before planting. Colchicine is toxic to both humans and plants. Handle it with extreme care. Wear rubber gloves, and don't get any in your mouth or eyes. When transferring the seeds to the germinating beds use tweezers, but apply very gentle pressure and grip the seed by its sides rather than its edge. Start at least one hundred seeds in this experiment. A large percentage of the seeds and seedlings will not survive treatment with this powerful substance, but many of those which do will become polyploids. These are clearly recognizable. They have darker, firmer and thicker foliage than the ordinary varieties. Also the flowers, pollen grains and seeds are much larger. These plants will be either triploids (three sets of chromosomes), tetraploids (four sets), or pentaploids (five sets). Of these the tetraploid is usually preferable because it has even sets of chromosomes and therefore reproduces best. There is some evidence, however, that the triploid has a slightly higher resin count than the tetraploid. Get rid of all non-polyploidal plants before maturity so that no diploid males accidentally pollinate any polyploid females. To retain their superior characteristics in future generations polyploids should cross only with other polyploids. Some overly cautious writers have warned against smoking colchicine-treated plants. They suggest that the grower wait until a second generation of plant is produced. This caution may be applicable where the older seedlings or near-mature plants have been exposed to the chemical. The amount which a seed might absorb, however, would be negligible when

diffused through an entire plant. Besides this most of the colchicine will have been dissipated after several months of growth. Colchicine is somewhat difficult to obtain. It is sometimes employed as a treatment for gout and is usually sold only by prescription.



STIMULATING GROWTH WITH HORMONES

Another chemical which can be used on plants is the growth stimulant gibberellic acid. It is available under the following commercial names: Gibberellen, Big Grow, G.A., Big Tabs, Gibrel, Brellin, Plant Shoot, and Gib-Sol. It encourages plants to take more moisture into their tissues and become larger with more profuse foliage. This gives the plant more leaf area for photosynthesis and augments both the quantity and quality of the harvest. Use it as the particular brand indicates on the label. Begin application while the plant is in its seedling stage. Its effect wears off after a while so it is necessary to apply regularly every few weeks. The plants should get no less than fourteen hours of light per day. The lower leaves should be pruned as soon as flower stalks appear so that the resin concentration goes to the top. Gibberellic acid treatments may slightly delay maturity and limit flower production. Its use should be terminated at the time of pruning. This discontinuation also aids resin production by lessening the absorption of water into the plant.





A MODERN MIRACLE

Good quality grass can be made even better by mixing it in a coffee can with an equal apparent volume of dry ice. Leave one small pinhole in the can's plastic cover for evaporation of the carbon dioxide gas and put the can in a freezer to delay the melting of the dry ice. After a few days the dry ice will be gone and the grass will be several times stronger than it was before. How this works is still a mystery. It is possible that the combination of carbon dioxide and extreme cold subtly alters the molecular structure of some of the less potent or non-potent isomers in the plant's THC resin complex. For example if one of the isomers $-CH(CH_3)(CH_2)4CH_3$ were converted to $-CH(CH_3)(CH_2)5CH_3$ it would have three and a half times its original potency.

* * * * *

Both amateur and professional scientists, technologists and agricultural experimenters labor relentlessly to bring you bigger and better highs. As new discoveries are made Stone Kingdom will see that the public is informed of them. But let us not become too dependent on highs which originate outside of ourselves. Remember: the biggest, best and most permanent high comes from within. It takes time, work, knowledge and devotion to acquire and master this dormant native high. But it is worth it! May the Breath of God be ours forever.

–M.J.S.

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